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ABSTRACT

This study of all high school graduates of June, 1966, in San Diego, California, supports the conclusion that college entry is affected by the socio-economic contexts of students' neighborhoods and schools through the intervening influence upon manifest ability, as indicated by I.Q. scores and grade point averages, and upon college aspirations. Contrary to initial expectations, it was found that the association between neighborhood and school socio-economic contexts and college entrance tended to disappear when controlled on indices of ability and aspiration. In other words, these data indicate that with equal manifest ability and aspiration indications, rates of college entry tend to be more or less equal among those from differing socio-economic contexts. However, these data also indicate that differing socio-economic contexts are associated with differing distributions on ability manifestations and college aspirations, which in turn is associated with differing rates of college entry. (Author)

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HIGH SCHOOL CHARACTERISTICS AND EDUCATIONAL OPPORTUNITY:
A Contextual and Career Analysis

Grant No. OEG-1-07-0036-3880

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September 1968

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INTRODUCTION

In simple logical form, educational success may be represented as an effect of variable ability, desire and opportunity. In aggregate analyses each of these three variables closely relates to social position, lending empirical support to popular concerns over the educational and social consequences of racial and socio-economic segregation.

The popular concern is further supported by general stratification theory, which holds that in organized society persons of similar position tend to interact with one another, thereby encouraging status-related variations in life styles, values and cognitive patterns. In turn, these variations result in status related differences, not only in opportunities to compete for success, but also in the development of linguistic and academic skills, and even in the capacities to recognize and want those opportunities that are offered. Apparently convinced that inequalities are thus organized and perpetuated, political and social leaders have increasingly encouraged closer racial and socio-economic balances in the schools.

But theories are abstract and general, while the logic of popular concerns is often marred by popular mythology. Thus it is reasonable that each be informed by objective observation, initially directed not toward questions of how to correct inequities in opportunity, but rather toward the question of whether such inequities actually exist. If it can be accepted that social segregation is reflected in school segregation, the immediate research problem is to identify whether the segregation results in differential encouragement of educational abilities and aspirations and/or in unequal opportunities to apply those abilities and realize those aspirations. The present report is directed toward this problem, in a

study of the pre-commencement plans and post-commencement experience of the 1966 high school graduates of the San Diego school system.

It would be difficult to deny that social segregation is reflected in the schools. Data in the "Coleman Report" clearly indicates that most elementary and high school students in this society attend schools that are racially segregated.[1] By implication the data emphasize that most students attend schools also segregated socio-economically, as Wilson earlier demonstrated in finding a high degree of concordance between the patterns of residential and school segregation[2]--a finding paralleled in the study by Rhodes, Reiss and Duncan.[3] Other studies, essentially descriptive, have documented status-related differences in college and university enrollments, consistently reporting that lower-economic groups and certain racial minorities are underrepresented in schools granting four-year and advanced degrees, and overrepresented among non-entrants.

Until recently, most studies into the reasons for or meaning of such observations have focused on the dependent variable of achievement motivation or aspirations for college training, with only speculative attention to college entry. Explanatory (or independent) variables were similarly limited in scope, concentrating on individual and family background attributes. Despite these limitations, this body of literature is valuable in its evidence that educational aspiration is related to sex (boys more often aspire to college), intelligence (brighter students more often aspire) and family income levels (the higher the income the more likely aspiration.)

More recently, educational aspirations have been related to the influence of social environment, such as socio-economic composition of schools, socio-economic composition of communities or neighborhoods, degree of urbanization, and characteristics of peer groups. Such variables are generally advanced as complementary rather than alternative to explanations

earlier identified. They suggest, that is, that contextual variables to some degree affect aspirations independently of intelligence, sex and family SES.[4]

Attention to contextual variables for the most part has remained at the level of speculation and argument, but some studies have attempted explicit test of the various theses implied. Wilson, studying high school boys in the San Francisco Bay-Oakland Area, found a positive relationship between social class composition of schools and educational aspiration. The relationship persisted when either family socio-economic status or measured intelligence was controlled.[5] Similarly, Turner found low but positive correlation between neighborhood context and ambition, even when the effects of family SES and intelligence were simultaneously controlled.[6] Michael, using a national sample of high schools, suggested that the intension to attend college is related to socio-economic composition of the high school senior class independently of the student's own socio-economic status or ability. However, the differences reported were small.[7]

By contrast, Sewell and Armer found that when sex, intelligence and family SES are simultaneously controlled, the relationship of neighborhood context to educational aspirations is considerably reduced. They cautioned that their results should not be interpreted to mean that neighborhood context can be ignored, for even a small amount of variance accounted for by that variable offers some contribution to understanding educational aspirations.[8] Nonetheless, their argument suggests care in turning to contextual explanations for aspirations. In a recent study, McDill, Myers and Rigsby support Sewell and Armer, arguing that their findings raise doubts about the overall adequacy of the socio-economic composition of high schools as an indicator of their educational climate. Relating socio-economic status of the school (determined by education of fathers),

to standardized measures of achievement on a mathematics test, they conclude that achievement is not attributable to the social class context of the school, nor to formal school characteristics deriving from economic resources of the community.[9]

Despite inevitable problems in methodology, each of these studies is relevant to the present report, particularly in sensitizing our interpretations. Of special significance, however, is a problem apparent only when the studies are clustered: they share an avoidance of one or the other aspect of the substantive problems they approach in common. Some relate aspirations and ability to neighborhood contexts, ignoring school contexts as well as college entry. Others relate these dependent variables to school contexts, neglecting neighborhood contexts and entry. Another body of literature similarly relates college entry, but not aspirations, to various stratification variables.[10] Thus the dimensions of the substantive problem have been obscured by limited perspectives: no single study has related variables that reflect all three theoretically necessary conditions of educational success (ability, desire, and opportunity) to both neighborhood and school contextual variables.

The present analysis attempts to relate all of these conditional and contextual variables to college entrance. The argument advanced may be summarized briefly: It is posited that: (a) ability, desire and opportunity are necessary to educational achievement; (b) ecological processes in large cities result in socio-economic segregation; (c) one consequence of this residential segregation is school segregation; (d) socio-economically different community and high school environments engender different bodies of shared norms, values and life styles, resulting in lower levels of academic skills and aspirations among lower status categories; (e) finally, the structures of opportunity are such that, even given equal abilities

and aspirations, college entry is more difficult among lower status categories.

The argument suggests that entry into college relates positively to socio-economic status, both of the neighborhood and of the composite high school membership. Further, the effects of neighborhood and school contexts on college entry should vary somewhat independently, displaying interactive or additive effects which persist even when measures of ability and aspiration, as well as other possible explanatory variables (such as sex and race), are taken into account. Relative distributions of I.Q. and plans to enter or forego college within various combinations of School and Neighborhood SES contexts can be directly identified; if inequalities are seen, it is reasonable (though not sufficient logically) to posit causal effects. But distribution of opportunities, per se, cannot be directly identified with our data, and it is difficult to conceive of any but the most gross measurements of such a variable. If we accept ability, desire and opportunity as necessary conditions of college entry, and if we hold constant ability and desire, then unequal distributions of college entrants among the varied neighborhood-school contexts can be taken as a reasonable indication of inequities in opportunity.

It is germane to the following analysis to point out that a negative finding in this case (that is, if the relation between college entry and neighborhood-school contexts disappears when I.Q. and intent are controlled) would provide a logically stronger argument, for if equality of opportunity among various strata is a necessary condition of equal rates of college entry, then demonstration of equal entry suggests equality of opportunity.

The argument is <u>logically</u> sound, and though the premise is subject to debate, it appears reasonable. Our reading of extant research reports and theoretical essays did not, however, suggest such argument. Rather,

we expected strong evidence that the effects of Neighborhood and School SES contexts upon college entry would be discernible even with control of measures of ability and aspiration. Therefore, we adopted the following working hypotheses:

Hy 1: College Entry is strongly related to Intent to enter college.

Hy 2: College Entry is strongly related to I.Q. (and/or GPA).

Hy 3: College Entry is strongly related to Neighborhood SES and School SES; the relation is somewhat stronger to Neighborhood SES and the effects of the two SES variables on College Entry are additive.

Hy 4: When Neighborhood and School SES are controlled, the relation of College Entry to Intent and to I.Q. will be somewhat diminished; effects of the control variables will be additive.

Hy 5: When Intent is controlled, the relation of College Entry to I.Q. and to Neighborhood and School SES will be somewhat diminished.

Hy 6: When I.Q. is controlled, the relation of College Entry to Intent and to Neighborhood and School Contexts will be somewhat diminished.

Hy 7: When any two of the independent variables (I.Q., Intent and Neighborhood and School SES) are controlled simultaneously, the relation of College Entry to the third independent variable will persist, though diminished to a somewhat greater degree than posited in Hypotheses 4-6.

Further hypotheses (not reported here) involved controls for sex and race, but neither variable demonstrated any notable effect.[11]

Hypothesis 7 is a restatement of the theory and popular concerns identified in the first paragraph of this report; i.e., the hypothesis states that although the independent variables (our measures of ability, aspiration and, indirectly, of Opportunity) are related to some degree, each has separate and distinct effects on college entry.

The data, specifications and methods of analysis employed to approach these hypotheses are described in the following section.

METHODS

The Data

Our sample was composed of the total graduating class of 1966 from the 11 general education secondary schools of the San Diego School System, numbering over 6,000 students who entered the 9th grade in 1963, graduated in 1966, and completed the first year of college, employment or other post high school activity in 1967.[12]

Five bodies of data were collected on these students:

1. High School transcripts, 9th through 12th grade. Information used in the transcript in the present analyses include sex, grade point average, and rank in class.[13]

2. Census tract information for address of residence of each senior. Mean and median income in tract, percent white, percent in various occupational groupings, and other standard census data are used in these analyses. These data provide the base for the variables, Neighborhood context and High School context, as described below.

3. Recorded scores on standardized tests administered by the school system throughout the high school career. In the present analyses, intelligence quotients from group and individual tests administered in the 10th grade are employed.

4. Returns from a questionnaire administered in the spring of 1966 (prior to graduation) by the San Diego Department of Administrative Research, in which students were asked about plans for work, college, military, or other experience following commencement, and to identify their specific goals, if any. Administered in individual classes during

school session, returns on this survey were exceptionally high, with but few evidences of unreliable response.[14]

5. A similar postcard survey administered in January of 1967 by the same department, in which graduates were asked to identify their actual activities seven months following commencement. A 70% response was obtained through this mail questionnaire.[15]

The Variables

The dependent variable identified in the above hypotheses, College Entry, was taken from responses to the 1967 survey, which for the present analysis were categorized as 4-year College Entry, 2-year College Entry, and Non-entry. The independent variable, Intent, was taken from responses to the 1966 survey and similarly categorized as Intent to Enter 4-year College, Intent to Enter 2-year College, No Intent to Enter College. The N's in the categories of these two variables may be seen in the marginals of Table 1, in which College Entry and Intent are related.

The independent variables of Neighborhood SES context and School SES context were developed from census tract data on the place of residence for each individual student. The variables, then, are aggregate indices: "School socio-economic status" is represented by a sum of ranks of aggregate mean income and mean years of school completed by the residents in the census tract of each student, combined with similar data for every other student in his school. Table 2 identifies the variations in socio-economic context. To allow higher-order analyses, the individual schools were grouped into 3 levels of school socio-economic context.[16]

"Neighborhood Socio-economic Status" represents the median income of the tract area in which each student lives. Again, for higher-order analyses, the students have been classified as resident in "high," "medium"

or "low" status neighborhoods. It should be noted that identical or similar classification results when other tract data, such as mean years of education or percent white, are employed. The less than perfect association of the two independent variables (see Table 3) suggests that the two can relate somewhat differently to the dependent variable.[17]

The control variables "Sex" and "Grade Point Average" (GPA) are taken from high school transcripts; "I.Q." was recorded from standardized intelligence tests (the large majority from Stanford-Binet, Webster and Hermon-Nelson) given by the San Diego school system in the 10th grade.[18] Correlation of these quotients with those on group tests given in earlier years and in the 11th grade to smaller percentages of the total sample are satisfactorily high. It must be remembered, however, that intelligence quotients are not only culturally relative but also that discrepant quotients between subcultures increases with number of years in socio-economically segregated school contexts.[19] The control variable, "Ethnic Group" was developed from a visual classification of high school year book pictures in which students were classified as White, Negro, Oriental, Mexican-American or "no photograph."

It is important to both the theory and to the following analysis to recognize the interrelation of the independent variables. Tables 4-6 identify the strong relation of I.Q. level to School and Neighborhood SES, of intentions to School and Neighborhood SES and of intentions to I.Q. level. These relationships suggest the necessity of higher-order analyses in any effort to approach our basic argument.

RESULTS

Descriptive Findings

Our strategy has been to analyze the relative effects of possible causal variables on College Entry, first through zero- and first-order associations, then through higher-order analyses in which the simultaneous effects of the various independent variables can be seen. Table 7 reveals a strong though considerably less than perfect relation between college intentions and college entry. Thirty-five percent of those students for whom we have complete information indicated six months after graduation from high school that their educational status was different from that suggested by reported intentions in the pre-graduation survey. Of these, almost 14% had achieved higher than intended (that is, entry into a four-year college though expecting a two-year college or no entry, or entry into a two-year college though expecting none). A larger proportion, 21%, indicated a lower achievement than intended. This total of 35% discrepancy between intentions and achievement must be considered an underestimate, for a substantial proportion of those for whom we have no post-graduate information and who indicated an intent to go to college may be reasonably assumed to have not entered college. At most, this could mean a 45% total discrepancy, with 31% achieving lower than intended. It is also reasonable to assume that a small proportion of those who did not intend to enter college and who did not respond to the post-graduate survey actually did enroll.[20]

Intent to enter a four-year college is most likely to be realized: 64% actually entered a four-year college and only 5% failed to enter any college at all. Even if it is assumed that all 16% of those who intended to enter a four-year college but failed to respond to the post-graduate survey failed to enter college, the follow-through is stronger than among

those who intended to enter junior college or to not enter; though, almost 1/3 of those who intended to enter a four-year college actually entered a junior college.

Intent to enter a junior college (all of which are local) is less likely than a four-year intent to result in any college attendance, and in particular there is little likelihood of entry into a four-year college. Almost 23% failed to enter at all, and 95% of the enrollees entered a junior college.

Among those who indicated no intention to enter college, a perhaps surprising 27% were enrolled 6 months after graduation, with over 6% enrolled in a four-year college. Not surprisingly, the bulk of entrants were in junior colleges; a heavy majority of those who did not intend to enter actually did not.

The general thrust of Table 8, then, is in support of our first hypothesis: Intent to enter college is strongly related to college entry.

Our second hypothesis utilizes I.Q. and high school grade point average (GPA) as basic indicators of manifest level of ability. Doubtless these measures correlate less than perfectly with actual ability, and, as will be argued in our discussion, it may be that some of these differences can be explained by variations in status-related life styles. For the present discussion, however, the critical points are that these factors affect decisions in college admissions, and likely affect at least some students' self conception and their evaluation of the situation and its potentials.

Table 9 demonstrates marked and consistant association between I.Q. level and both intent and attendance. The proportion with four-year college intentions drops from 55% among the highest I.Q. grouping to 4% among the lowest. Similarly, 48% of the top I.Q. category entered a

4-year college, compared to only 2% of the lowest category. No plans for college were reported by 22% of the highest I.Q. category; 62% of the lowest. Only 17% of the highest grouping did not enter some college; 66% of the lowest.

Noteworthy differences are also seen in the associations between intentions and attendance, although the proportion who did not follow their intentions does not vary greatly from one I.Q. level to another: 30% among the highest and 35% among the lowest. At the highest I.Q. level, the major discrepancy is among those who indicated no intention to enroll: 44% entered college, equally divided among four- and two-year schools. At the lowest I.Q. level, the largest discrepancy is among those who indicated intention to enter four-year college: only 2 of 19 cases did so. Interestingly, the "High I.Q.-No Intent" student was as likely to enter college as was the "Low I.Q.-Intending college" student. In sum, high I.Q. appears to be a good indicator of college entry regardless of intent, while low I.Q. is a good indicator of non-entry regardless of intent.

Table 10 shows an even stronger association of intentions and attendance with high school GPA. Sixty-seven percent of "A" and "B" students indicated plans to enter a four-year school, and 62% so enrolled. These proportions drop consistently and sharply with decreased GPA. Among those with less than a C average, only 4% aspired to a four-year college, and only 1% did so enroll. Only 19% of the A and B students did not intend to enter college, and about half as many failed to enroll. Among the "Less than C" students these figures were approximately three times higher.

The associations between intentions and attendance at each GPA level closely follow those described for I.Q. levels. The proportion of

discrepancy between intentions and post-graduate experience does not differ to any significant extent from one GPA level to another.

There are, however, noteworthy differences in patterns of association. One-half of the A-B students who indicated no intent to enter college actually enrolled, two-thirds of them in a four-year institution. At the lowest end of the GPA index, less than one-fifth with no intent entered college, almost all at the two-year level. Conversely, less than 5% of the poorest GPA grouping who intended to enter 4-year college in fact so enrolled compared to 79% of the A and B students who aspired to four-year college.

It is clear that good high school grades are a strong indicator of college entry regardless of intent. The relation of low grades to entry is more complicated, however: Low grades strongly indicate no enrollment in a four-year college regardless of intent, but junior college enrollment is indicated by intent to enter college regardless of poor grades.

The general thrust of Tables 9 and 10, then, is support of our second hypothesis: college entry is strongly related to I.Q. and/or GPA.

Our third hypothesis relates School and Neighborhood context to college entry. Each of the contextual variables was developed by aggregating the median measures of educational level and/or income of the census tract in which each student lives. Neighborhood SES, then, represents an aggregate of the education and income levels of all students, categorized for analyses into three categories; high school SES represents the median of the aggregated mean incomes of census tracts in which the individual students composing the senior class live. It should be clearly understood, then, that the student is the basic unit of analysis even though we were not able to obtain information on individual family income or education to parallel the contextual level of socio-economic variables.

Table 11 identifies the relation of intent to entry with the three categories of Neighborhood SES. The table marginals indicate a strong and similar relationship of intent and attendance to neighborhood SES. In High Income neighborhoods 42% reported four-year college intentions, compared to 16% in low income areas. Twenty-eight percent from high income areas reported no college plans at all; 45% from low income areas. Thirty-four from high income areas actually enrolled in a four-year college, 22% in no college at all; in low income areas only 12% enrolled in a four-year college, and 45% did not enter at all. Clearly there is consistent decrease in level of Intent and of Entry with decreasing neighborhood economic status.

Table 11 also hints at the possibility that the nature of the association between intent and entry changes from High to Low Neighborhood SES. Of those who intended to enter four-year college, actual entry was more frequent for those from a high income area (69%) then for those from a low income area (57%). Similarly, the intent to not enter college was more likely to be realized in low income areas (75% had not entered) than in high income areas (58%). But at each income level the nature of the overall discrepancy between intent and entry is closely similar. Roughly 14% achieved higher than the reported intentions; roughly 21% achieved lower.

In sum, it appears that Neighborhood SES strongly relates to differences in pre-graduate intent and post-graduate college entry, but it does not appear that Neighborhood SES is related to substantial differences in the total relationship between Intent and Entry.

Other indicators of neighborhood socio-economic status available in census tract data--median years of school, median values of dwelling units, and percent in upper or lower occupational categories--show no appreciable

differences in patterns of relationship with Intent and Entry from those shown by the index (combining median income and education) described above. In every case, the higher the socio-economic status, the greater the proportion who intend to enter a four-year college or who intended to enter any college at all, and the greater the proportion actually enrolled in college. At each socio-economic level the association between Intent and Entry is similar to that described for the Neighborhood SES index. Given initially different intentions at each level, approximately 2/3 follow through on their intentions, with around 14% showing higher achievement than indicated prior to graduation and 21% showing lower. Table 12 demonstrates these relations.

Table 13 reveals a clear relation between School SES and College Entry and a somewhat less marked relation with College Intent. Only 13% more students in low SES schools indicate no intention to enter college, while 20% more did not in fact enter. In general, however, the pattern of association between School SES and either Intent or Entry does not differ from that identified in the discussion of Neighborhood SES, suggesting that School SES and Neighborhood SES are somewhat imperfect mirrors of one another in relationship to college intentions and entry.

But the association between Neighborhood and School SES is considerably less than perfect (see Table 3) suggesting that these data provide indices of two different but not empirically unrelated aspects of the environmental context of students that are relevant to educational experience and values. Further analyses will demonstrate that Neighborhood SES and School SES provide independent and cumulative effects on Intent and Attendance. That is, consistent differences in intentions and attendance appear between categories in which Neighborhood and School SES are both high, in which they are both middle or of differing SES, and in which

they are both Low SES. Table 14 indicates that 50% of those from "High SES Neighborhoods and Schools" intended to enter a four-year college and 37% actually did so. These figures drop consistently as School and Neighborhood SES interact; at the lowest level, 12% intend to enter a four-year college and 8% actually enroll. That is, variations in intentions and in attendance are greater when both neighborhood and school contexts are taken into account. Again, however, the pattern of association between Intent and Entry is more or less the same for each combination of Neighborhood and School SES: Given the initially differing levels of college intentions, each combined category of Neighborhood and School SES shows roughly the same proportionate discrepancy between intent and actual attendance.

Tables 11, 12 and 14 suggest much of relevance to our discussion; for the moment it is sufficient to identify their general thrust, which is consistent with Hypothesis 3. That is, the tables suggest that although college entry is more strongly related to Neighborhood than School SES, the effects are additive. In addition, it is especially noteworthy that the effects of Neighborhood SES are particularly strong at the lowest school SES level. The effects of Neighborhood and School SES on intent to enter college are also additive, and again Neighborhood SES appears to be the stronger variable.

Our analyses to this point support the argument that college entry in one California community is related to aspiration (Table 8), to ability (Tables 9 and 10), and to the socio-economic status of the student's neighborhood and school (Tables 11-14). If the last set of variables (Neighborhood and School SES) is taken as an indicator of status-related hinderances and inducements inherent in the opportunity structure, the data suggest that ability, aspiration and opportunity are indeed involved

in the social selection of college entrants. Hence our analyses, thus far, essentially confirm earlier findings and theoretical derivatives.

We have also seen, however, that the independent variables are interrelated, and possibly interact in relation to college entry; their effects, then, must be viewed simultaneously, requiring higher-order analyses. We now turn to this task.

Higher-Order Analyses

The foregoing analyses have revealed a strong zero-order relation of College Entry (1) to Intent, (2) to I.Q. (and GPA) and (3) to Neighborhood and School SES contexts. Because of the marked relationships of these independent variables to one another (Tables 4-6), it is necessary to consider the relation of each to College Entry when the others are employed as controls (see Hypotheses 4-7).

Table 15 reveals that controlling for Intent only moderately diminishes the strong relation of College Entry to I.Q.; just as when I.Q. was controlled in Table 9 the relation of College Entry to Intent was only moderately diminished. The general thrust of these tables is consistent with our hypotheses.

Even in Tables 9 and 15 it is somewhat difficult to identify effects among the array of cells; to avoid the confusions inherent in presenting the partials for the third- and fourth-order relations, in the following analyses control variables are standardized. The technique of test factor standardization, recently introduced to social analyses by Rosenberg, is similar to that employed by demographers in constructing standardized populations. The effect of the control variable is held constant, or standardized, by providing each category of the independent variable with an equal distribution of the control variable. A theoretical table is

thus constructed, showing what the percentage distribution among categories of the dependent variable would be if there were no association between the independent variable and the control variable.[21] For example, the 36 cells of Table 9 (College Entry by Intent by I.Q.) are represented by the nine cells of Table 16, in which the effects of controlling (in this case, standardizing) for I.Q. are readily seen. It must be emphasized that Table 16 is theoretical, identifying what the relation of College Entry would be <u>if</u> I.Q. were equally distributed in each category of Intent. Standardized tables do not accurately represent the characteristics of a sample; i.e., I.Q. clearly is <u>not</u> equally distributed: The purpose is to aid in relating independent variables to dependent and to one another without the interfering effects of other associated variables. That is precisely the task we face in the final phase of our analyses.

That task is greatly simplified by the unexpected distributions of Tables 17 and 18, in which the relations of College Entry to Intent and to I.Q. are standardized on Neighborhood and School SES. We had hypothesized that the relations would be somewhat diminished; in fact the effects are slight on College Entry and I.Q., and negligible on College Entry and Intent. Third-order analyses (not reported here), in which I.Q. <u>or</u> Intent are controlled simultaneously with Neighborhood and School SES, support the reasonable conclusion required by the foregoing tables: <u>I.Q. and Intent are strongly related to College Entry, despite simultaneous controls on the other independent variables involved in this analysis</u>.

The minor effects of Neighborhood and School SES revealed in Tables 17 and 18 suggests that these variables cannot be taken as intervening in the relationships of I.Q. and Intent to College Entry. Yet Neighborhood and School SES show a moderately strong relation to College Entry (see Tables #3A, 11-14). The remaining and perhaps most vital question in

our analysis, then, is what happens to the relation of these SES variables to College Entry when I.Q. and Intent are controlled.

The effects of standardizing I.Q. on the relation of College Entry and the SES variables are demonstrated in Table 19, which yields a Gold's I of .2182; i.e., about 22% of the original relationship is accounted for by I.Q.[22] Nonetheless, the remaining relationship is strong, and the additive effects of school and neighborhood contexts persist.

Standardization on intent, however, accounts for a greater proportion of the original relationship. Table 20 yields a Gold's I of .4506: some 45% of the relationship of College Entry to School and Neighborhood SES is accounted for by variable Intent. Some relationship remains, however, and again the additive effects of Neighborhood and School context are discernible.

To address the critical question of whether the effects of I.Q. and Intent interact, both variables are standardized in Table 21, accounting for a roughly estimated 65% of the original relationship.[23] The control variables, then, appear to be additive in effects on the association between College Entry and the SES variables. Indeed, the unusually strong effects of the control variables are perhaps only somewhat reflected in the variations in Gold's I or in the Chi-square values on which that measure is based, for our sample N is so large that the smallest of statistical differences registers as significant.[24]

These data and tables, then, reveal nothing to contradict the argument that I.Q. and Intent affect College Entry. The findings were expected. But the analyses also reveal that what had appeared in lower-order tables to be a moderately strong relationship of College Entry to Neighborhood and School SES is accounted for by variations in Intent and I.Q. This

striking finding would seem to contradict our original hypotheses, and takes central focus in the following discussion.

As that discussion turns on the question of the proper ordering of independent variables, one final analysis should be reported. It is reasonable to take I.Q. and Neighborhood and School SES contexts as antecedent to Intent, which for the moment may be considered the dependent variable. Both I.Q. and the SES variables have been shown to be strongly related to Intent, and to one another, again raising the question of the causal relation of the independent variables in relation to the dependent. Our analyses have already suggested that Neighborhood and School SES is not an intervening variable in the relation of I.Q. to College Entry; implying that neither is it intervening in the relation of I.Q. to Intent. The implication is supported in Table 22, which reveals (compared to the zero-order relation in Table 5) almost no effect of standardizing on Neighborhood and School SES.

Somewhat different effects on the relation of Intent to School and Neighborhood SES are seen when I.Q. is controlled (Table 23; compare with Table 4). The relation remains strong, and the additive effects of the SES variables are apparent. But the standardized table yields a Gold's I of .2940 resulting from a moderate overall reduction in the relation, with strongest effects apparent among the Low Neighborhood-Low School and High Neighborhood-High School categories. Tables 22 and 23, then, show that although the relationships of the SES variables and I.Q. to Intent are to a considerable degree independent, I.Q. does account for some 29% of the relationship of the SES variables and Intent. Though these varied effects may be interpreted in many ways, they would seem to suggest that to some degree I.Q. is an intervening variable in the relationship of Neighborhood and School SES to Intent, thus further suggesting that Neighborhood and

School SES are likely prior to I.Q. and Intent in any reasonable causal ordering.

DISCUSSION

It will be recalled that we posited ability, aspiration and opportunity as necessary to educational achievement and that each of these variables relates to an important degree to socio-economic position. These arguments led to seven working hypotheses, which with two exceptions were supported in our analyses. When Neighborhood and School SES were controlled, the effects on the relation of College Entry to Intent and to I.Q. were minor (failing to support Hypothesis 4); by contrast, the relation of those SES variables to College Entry nearly vanished when I.Q. and Intent were controlled (contradicting Hypothesis 7). Our data, then, support the following propositions.

Ability: College Entry is related to I.Q. and GPA (and in tables not reported here the latter two variables display minor additive effects). The higher the I.Q. (or GPA) the more likely is College Entry. Variations in Intent to some degree modifies these relationships, but they are fairly independent of variations in Neighborhood and School SES. Measured ability, then, may be taken as a condition of College Entry.

Further, I.Q. (and GPA) is strongly related to variable Neighborhood and School SES contexts: status-related inequalities in performance on tests of ability and presumably in capacity to compete academically are clearly revealed in the zero-order tables.

Aspiration: As hypothesized, College Entry is strongly related to Intent to enter College, and the relationship, though reduced, persists when I.Q. (or GPA) is controlled. Hence aspirations also may be taken as a condition of College Entry.

Intent also is related to Neighborhood and School SES contexts, and the relationship, though reduced, persists when I.Q. (or GPA) is controlled: status-related inequalities in the distribution of aspirations are revealed.

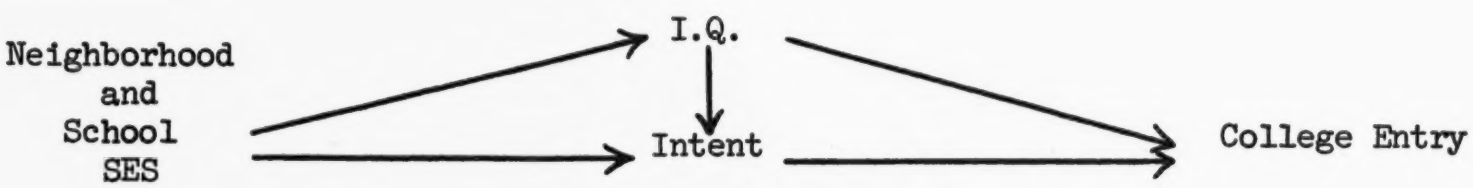
Opportunity: We hypothesized that the unequal rate of entry into college among various Neighborhood and School SES categories would persist even when I.Q. and Intent were controlled, implying status-related differences in available opportunities. When the controls were introduced, however, the relationship was dramatically reduced, almost to the point of vanishing.

The meaning of this unexpected finding turns on the question of proper ordering of the independent variables: our original hypotheses were couched on the assumption that Neighborhood and School SES contexts would reflect two types of variation. First, and most clearly in our theoretical-practical model, SES contexts would reflect variable rates of realizing aspiration (even when measured ability was controlled), suggesting the operation of direct inequalities of opportunity, and of effective discrimination. Second, the SES variables would reflect the effects of differing contexts on both aspirations and measured abilities. In the first type, then, the SES variables are taken as intervening to modify the relationships of College Entry to Intent and I.Q. In the second type, the SES variables are taken to be independent, and Intent and I.Q. as dependent and perhaps as intervening in the relation of College Entry to Neighborhood and School SES contexts. Our hypotheses and strategies of analysis allowed for either or both types of variation; the question is whether either or both is indicated in our findings.

Although tabular analyses do not permit deductions of causal ordering, they can exhibit characteristics that are necessary (but not sufficient)

in a causal interpretation. For example, introduction of a valid intervening variable in a causal relationship necessarily results in attenuation of the original relationship in partialled tables. Though not logically sufficient, then, such attenuation can be taken as an indicator of an intervening relationship. In our data, controlling for Neighborhood and School SES has little effect on the relationships of College Entry to I.Q. and to Intent. But when I.Q. and/or Intent are controlled, attenuation does occur in the relation of College Entry to Neighborhood and School contexts. Hence the analyses suggest that the SES contexts do not act as intervening variables in these analyses: our data give no evidence of effective discrimination or other inequities of opportunity, <u>given equality of ability and aspiration</u>.[25]

As suggested in our analysis, and supported by Table 22, if Neighborhood and School SES are not intervening in the relationships of College Entry to I.Q. and Intent, neither do they intervene in the relationship of I.Q. to Intent. Rather, it is reasonable to argue that I.Q. to some degree intervenes in the relation of Intent to the SES variables: that is, that School and Neighborhood SES contexts to some noteworthy degree affect performance on intelligence tests and other academic measures, thereby indirectly, as well as directly, affecting Intent. Further, through these effects on I.Q. and Intent, Neighborhood and School SES contexts affect College Entry. Though it is not strictly established, then, we propose the following ordering as the most promising interpretation of our data and as most appropriate for further research in similar conditions:



In short, data and analyses fail to support the contention that, holding I.Q. constant, persons from lower-status neighborhoods or schools in the city studied are directly discriminated against in college admissions or otherwise hampered in realizing their intentions to enter college. But the data do lend themselves to the interpretation of differential contextual effects via the transmission of status-related differences in social and academic skills and attitudes. This interpretation appears reasonable and consistent with the general thrust of extant literature, suggesting once again the importance of more closely examining the interactive relation of neighborhood and school contexts with the development of linguistic and other cognitive abilities necessary to academic achievement and with encouragement of attitudes and values that relate to educational success.

IMPLICATIONS

These findings, if valid, carry important social and political implications. If it is true that students from lower SES schools and neighborhoods do not suffer inequitable hinderances in at least preliminary steps toward aspired educational goals, then efforts to equalize opportunities may be better focused on the causes of inequalities in ability test performances and aspirations than on overt exercise of discrimination.

Because of these far-reaching practical implications, some perhaps obvious cautions in interpretation must be emphasized. First, our data were gathered in a moderate-sized city with a comparatively quiet history of class or racial strife and with a comparative abundance of educational facilities. Second, if valid, our findings may reflect the effects of scholarship aid and other programs to diminish discrimination in educational institutions; it is possible that in other locations, such effects may not

have yet been evident. Third, the data were gathered in a situation, not unusual in contemporary American cities, in which there is no great rush for admission to colleges (and especially to 4-year schools) among the less privileged status categories; comparatively few students from lower socio-economic contexts both intended to enter college and scored high on standardized I.Q. tests. For instance, if status-related inequities in aspirations and in I.Q. scores were removed (such that colleges were suddenly besieged with applications from qualified but low SES students) it is possible that status-related discriminations and other barriers would be evidenced. In short, the data relate to specific locale at a specific time.

It should be remembered also that the study without important data limitations has yet to appear in social inquiry. At best, these limitations can only be identified and considered in interpreting the findings. In our analyses, the relationship of Neighborhood and School SES to College Entry <u>almost</u> vanished when controls were introduced. A number of methodological cautions are pertinent to interpretation of this finding. First, had we stronger indices, especially of Neighborhood SES (which we take to be a weak representation of family socio-economic status such as was analyzed by Sewell and Armer), the contextual effects on College Entry might possibly have been more persistent. Second, there is a possible contamination of our Neighborhood and School SES variables, for the two are constructed from similar census tract data. The overall effect of such contamination, if any, would likely be the suppression of differences in the two variables. Although the two vary somewhat independently, it is possible that more cleanly constructed variables would have offered greater independent explanation and in turn greater persistence when other variables were controlled. Third, comparison of those who failed to respond

to the second survey (and who were thereby omitted from most tables) with those for whom we have complete data suggests that the relationships of Intent and I.Q. to College Entry are exaggerated, while the relationship of Neighborhood and School SES context to College Entry is less strong than would have been found had all subjects responded. Although we suspect otherwise, it is possible that the addition of these cases in higher-order analyses would reveal some relation of the SES variables to College Entry independent of I.Q. and Intent.

Finally, it must be emphasized that even if our conclusions are valid and generalizable, they do not indicate that social status is unrelated to educational achievement or even to college entry. At most our data can be taken to suggest the possibility that of the 1966 graduates of San Diego high schools, students from Low SES Neighborhoods or Schools were as likely to enroll in college as those from more privileged areas and schools, if they had evidenced ability and a desire to enter college. Thus, the data support the argument that discrimination in college admissions and other status-related hindrances to college entry are minimal. This is not to say, however, that manifested abilities and aspirations are unaffected by socio-economic segregation in neighborhoods and schools; indeed, our data and interpretations suggests that variations in both I.Q. and intent to enter college are effects, in part, of differences in school and neighborhood contexts.

We urge caution, then, in accepting the unexpected conclusion that discrimination is minimal; because it is unexpected, because the data are strictly relevant only to a specific time and place, because a single study suffers telling inadequacies, we would recommend the support of studies more consciously and carefully directed toward our post-hoc analyses and interpretations.

In the same spirit and for the same reasons, we urge both policy and program attention to the more familiar argument supported by our data: socio-economic segregation results in lower levels of academic skills and aspiration among the children of the less advantaged, which, in turn, results in proportionately lower rates of college entry.

SUMMARY

This study of all high school graduates of June, 1966, in San Diego, California, supports the conclusion that college entry is affected by the socio-economic contexts of students' neighborhood and school through the intervening influence upon manifest ability, as indicated by I.Q. scores and grade point averages, and upon college aspirations. Contrary to initial expectations, it was found that the association between neighborhood and school socio-economic contexts and college entrance tended to disappear when controlled on indices of ability and aspiration. In other words, these data indicate that with equal manifest ability and aspiration indications, rates of college entry tend to be more or less equal among those from differing socio-economic contexts. However, these data also indicate that differing socio-economic contexts are associated with differing distributions on ability manifestations and college aspirations, which in turn is associated with differing rates of college entry.

Table 1

Percent Entering College by Intent to Enter

	Intent			
Entry	4-Yr.	2-Yr.	None	Total
4-Yr.	53.2	2.5	6.4	17.7
2-Yr.	25.9	53.1	20.4	35.0
No	4.4	16.3	31.8	18.1
N.A.	16.5	28.2	41.5	29.3
Total	100.0	100.0	100.0	100.0
	(1729)	(2517)	(2047)	(6293)
	27.5	40.0	32.5	100.0

Table 2

Socioeconomic Status Classification of San Diego High Schools, 1966

Schools	Mean Years School	Rank	Mean Income	Rank	Sum of Rank
High SES					
1	13.4	1	$8752	1	2
2	12.5	4.5	8176	2	6.5
3	12.5	4.5	8114	3	7.5
Middle SES					
4	12.5	4.5	7569	4	8.5
5	13.0	2	7247	7	9
6	12.5	4.5	7366	6	10.5
7	12.0	8	7375	5	13.0
8	12.2	7	7027	8	15.0
Low SES					
9	11.8	9	6626	9	18.0
10	11.1	10	5876	10	20.0
11	10.8	11	5627	11	22.0

Table 3

Neighborhood Socio-economic Status by School Socio-economic Status, San Diego High School Graduates, June, 1966

		Neighborhood SES			
		High	Middle	Low	Total
School SES	High	44.8	20.2	8.9	24.1
	Middle	52.0	59.4	42.8	53.9
	Low	3.1	20.4	48.3	22.0
		100.0	100.0	100.0	100.0
		(1441)	(2911)	(1215)	(5567)
	Total	25.9	52.3	21.8	100.0

Table 3A

Percent Entering College by School and Neighborhood Socio-economic Status

		School SES: High			School SES: Middle			School SES: Low		
		Neighborhood SES								
		High	Middle	Low	High	Middle	Low	High	Middle	Low
Entry	4-Yr.	36.5	26.3	20.0	31.4	16.5	14.5	31.6	17.2	8.0
	2-Yr.	43.2	41.8	38.9	45.1	44.5	44.3	42.1	37.7	41.9
	None	20.4	31.9	41.1	23.5	39.0	41.2	26.3	45.1	50.1
		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	(N)	(570)	(517)	(95)	(659)	(1500)	(447)	(38)	(472)	(461)

(4759)

Table 4

Percent Intending College Entry by School and Neighborhood Socio-economic Status

Intent	School SES: High — Neighborhood SES: High	High — Middle	High — Low	Middle — High	Middle — Middle	Middle — Low	Low — High	Low — Middle	Low — Low
4-Yr.	49.5	31.1	23.2	35.4	22.7	17.9	39.5	26.7	12.1
2-Yr.	27.5	34.0	35.8	32.6	38.9	36.5	42.1	33.1	42.5
None	23.0	34.8	41.1	32.0	38.3	45.6	18.4	40.3	45.3
(N)	(570)	(517)	(95)	(659)	(1500)	(447)	(38)	(472)	(461)

(4759)

Table 5

Percent Intending College Entry by I.Q. Level

Intent	High	Mid High	Middle	Low	Total
4-Yr.	54.6	25.4	12.5	4.1	28.5
2-Yr.	23.8	39.5	42.4	33.5	35.1
None	21.6	35.1	45.2	62.4	36.4
	100.0	100.0	100.0	100.0	100.0
	(1370)	(1767)	(1164)	(468)	(4769)
Total	28.7	37.1	24.4	9.8	100.0

Table 6

Percent at Each I.Q. Level by School and Neighborhood Socio-economic Status

I.Q.	School SES: High			School SES: Middle			School SES: Low		
	Neighborhood SES: High	Middle	Low	High	Middle	Low	High	Middle	Low
High	42.6	32.2	20.7	36.3	28.5	24.7	32.3	19.3	10.4
M Hi	37.1	40.7	42.7	37.7	39.6	36.0	38.7	34.9	28.4
Mid	16.3	23.0	32.9	21.2	22.9	28.6	22.6	30.8	32.2
Low	4.0	4.2	3.7	4.8	9.0	10.6	6.5	15.0	28.9
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
(N)	(526)	(479)	(82)	(623)	(1378)	(405)	(31)	(441)	(422)

(4387)

Table 7*

Percent Entering College by Intent to Enter College

	Intent			
Entry	4-Yr.	2-Yr.	None	Total
4-Yr.	63.8	3.4	6.4	21.0
2-Yr.	31.0	73.9	20.4	41.5
None	5.2	22.7	73.3	37.5
	100.0	100.0	100.0	100.0
	(1443)	(1808)	(2047)	(5298)
Total	27.3	34.1	38.6	100.0

*See fn. 20.

Table 8*

Percent Entering College by Intent to Enter College

	Intent			
Entry	4-Yr.	2-Yr.	None	Total
4-Yr.	63.8	3.4	10.9	25.0
2-Yr.	31.0	73.9	34.8	49.5
None	5.2	22.7	54.3	25.5
	100.0	100.0	100.0	100.0
	(1443)	(1808)	(1197)	(4448)
Total	32.4	40.6	26.9	100.0

*See fn. 20.

Table 9

Percent Entering College by Intent to Enter,
Holding Constant I.Q. Level

High I.Q.

Entry	Intent: 4-Yr.	2-Yr.	None	Total
4-Yr.	75.7	8.6	22.3	48.2
2-Yr.	21.9	74.8	22.0	34.5
None	2.4	16.6	55.7	17.3
	100.0	100.0	100.0	100.0
	(748)	(326)	(296)	(1370)
Total	54.6	23.8	21.6	100.0

Mid High I.Q.

Entry	Intent: 4-Yr.	2-Yr.	None	Total
4-Yr.	54.9	2.0	7.1	17.2
2-Yr.	37.9	74.5	25.9	48.2
None	7.1	23.5	67.0	34.6
	100.0	100.0	100.0	100.0
	(448)	(698)	(621)	(1767)
Total	25.4	39.5	35.1	100.0

Table 9 (cont.)

Middle I.Q.

Entry	Intent: 4-Yr.	2-Yr.	None	Total
4-Yr.	42.1	2.6	1.9	7.2
2-Yr.	46.9	75.9	21.7	47.8
None	11.0	21.5	76.4	45.0
	100.0	100.0	100.0	100.0
	(145)	(493)	(526)	(1164)
Total	12.5	42.4	45.2	100.0

Low I.Q.

Entry	Intent: 4-Yr.	2-Yr.	None	Total
4-Yr.	10.5	1.9	0.3	1.3
2-Yr.	52.6	67.5	13.4	33.1
None	36.8	30.6	86.3	65.6
	100.0	100.0	100.0	100.0
	(19)	(157)	(292)	(468)
Total	4.1	33.5	62.4	100.0

Table 10

Percent Entering College by Intent to Enter, Holding Constant Grade Point Average in High School

GPA: Less than 2.00

Entry	Intent: 4-Yr.	2-Yr.	None	Total
4-Yr.	4.7	1.3	0.4	0.9
2-Yr.	69.8	64.6	15.3	34.0
None	25.6	34.1	84.3	65.1
	100.0	100.0	100.0	100.0
	(43)	(390)	(719)	(1152)
Total	3.7	33.9	62.4	100.0

GPA: 2.00-2.39

Entry	Intent: 4-Yr.	2-Yr.	None	Total
4-Yr.	15.7	1.4	1.2	2.8
2-Yr.	71.2	75.6	23.2	53.1
None	13.1	23.0	75.6	44.1
	100.0	100.0	100.0	100.0
	(153)	(731)	(643)	(1527)
Total	10.0	47.9	42.1	100.0

Table 10 (cont.)

GPA: 2.40-2.79

Entry	Intent: 4-Yr.	2-Yr.	None	Total
4-Yr.	53.2	4.0	7.0	19.6
2-Yr.	39.4	80.9	31.3	53.9
None	7.5	15.1	61.7	26.5
	100.0	100.0	100.0	100.0
	(348)	(476)	(342)	(1166)
Total	29.8	40.8	29.3	100.0

GPA: 2.80-4.00

Entry	Intent: 4-Yr.	2-Yr.	None	Total
4-Yr.	79.0	14.5	36.6	61.6
2-Yr.	19.0	68.9	17.9	25.9
None	2.0	16.6	45.5	12.4
	100.0	100.0	100.0	100.0
	(895)	(193)	(257)	(1345)
Total	66.5	14.3	19.1	100.0

(5190)

Table 11

Percent Entering College by Intent to Enter,
Holding Constant Neighborhood Socio-economic Status

High Neighborhood SES

Entry	Intent: 4-Yr.	2-Yr.	None	Total
4-Yr.	68.9	3.9	13.5	33.7
2-Yr.	28.5	79.4	28.7	44.1
None	2.6	16.8	57.9	22.2
	100.0	100.0	100.0	100.0
	(530)	(388)	(349)	(1267)
Total	41.8	30.6	27.5	100.0

Middle Neighborhood SES

Entry	Intent: 4-Yr.	2-Yr.	None	Total
4-Yr.	61.3	4.3	4.2	18.6
2-Yr.	32.0	71.5	21.8	42.7
None	6.7	24.2	74.0	38.7
	100.0	100.0	100.0	100.0
	(628)	(916)	(945)	(2489)
Total	25.2	36.8	38.0	100.0

Table 11 (cont.)

Low Neighborhood SES

		Intent			
		4-Yr.	2-Yr.	None	Total
Entry	4-Yr.	57.0	0.5	6.4	12.1
	2-Yr.	33.5	74.0	18.5	42.6
	None	9.5	25.4	75.1	45.3
		100.0	100.0	100.0	100.0
		(158)	(393)	(453)	(1004)
	Total	15.7	39.1	45.1	100.0
					(4760)

Table 12

Percent Entering College by Intent to Enter, Holding Constant Median Amount of Formal Schooling in Census Tract of Residence

Less than 10th Grade

Entry	Intent: 4-Yr.	2-Yr.	None	Total
4-Yr.	46.0	0.5	4.4	7.7
2-Yr.	41.3	73.5	17.7	43.5
None	12.7	26.0	77.9	48.8
	100.0	100.0	100.0	100.0
	(63)	(219)	(249)	(531)
Total	11.9	41.2	46.9	100.0

10th and 11th Grades

Entry	Intent: 4-Yr.	2-Yr.	None	Total
4-Yr.	64.5	3.7	7.3	19.8
2-Yr.	29.8	70.0	19.3	38.1
None	5.7	26.3	73.4	42.0
	100.0	100.0	100.0	100.0
	(141)	(190)	(259)	(590)
Total	23.9	32.2	43.9	100.0

Table 12 (cont.)

High School Graduates

Entry	Intent: 4-Yr.	2-Yr.	None	Total
4-Yr.	64.5	3.5	6.4	21.9
2-Yr.	30.1	74.3	23.2	43.7
None	5.4	22.2	70.4	34.3
	100.0	100.0	100.0	100.0
	(930)	(1185)	(1146)	(3261)
Total	28.5	36.3	35.1	100.0

More than High School

Entry	Intent: 4-Yr.	2-Yr.	None	Total
4-Yr.	65.6	5.7	13.7	36.5
2-Yr.	31.7	77.1	31.6	44.0
None	2.7	17.1	54.7	19.4
	100.0	100.0	100.0	100.0
	(186)	(105)	(95)	(386)
Total	48.2	27.2	24.6	100.0

Table 13

Percent Entering College by Intent to Enter,
Holding Constant School Socio-economic Status

High SES School

Entry	Intent: 4-Yr.	2-Yr.	None	Total
4-Yr.	68.1	4.2	8.9	30.5
2-Yr.	28.4	75.2	23.1	40.8
None	3.5	20.5	68.0	28.7
	100.0	100.0	100.0	100.0
	(517)	(400)	(416)	(1333)
Total	38.8	30.0	31.2	100.0

Middle SES School

Entry	Intent: 4-Yr.	2-Yr.	None	Total
4-Yr.	64.3	2.7	6.9	19.6
2-Yr.	30.0	75.9	22.1	43.1
None	5.7	21.4	71.0	37.2
	100.0	100.0	100.0	100.0
	(719)	(1030)	(1156)	(2905)
Total	24.8	35.5	39.8	100.0

Table 13 (cont.)

Low SES School

Entry	Intent: 4-Yr.	2-Yr.	None	Total
4-Yr.	51.2	4.5	2.7	12.9
2-Yr.	40.6	66.9	14.0	38.1
None	8.2	28.6	83.3	49.1
	100.0	100.0	100.0	100.0
	(207)	(378)	(473)	(1058)
Total	19.6	35.7	44.7	100.0
				(5296)

Table 14

Percent Entering College by Intent to Enter, Holding Constant Neighborhood and School Socio-economic Status

High SES Neighborhood

High SES School

Entry \ Intent	4-Yr.	2-Yr.	None	Total
4-Yr.	64.2	5.1	14.5	36.5
2-Yr.	33.3	75.2	26.0	43.2
None	2.5	19.7	59.5	20.4
	100.0	100.0	100.0	100.0
	(282)	(157)	(131)	(570)
Total	49.5	27.5	23.0	100.0

Middle SES School

Entry \ Intent	4-Yr.	2-Yr.	None	Total
4-Yr.	74.7	2.3	13.3	31.4
2-Yr.	22.7	83.3	30.8	45.1
None	2.6	14.4	55.9	23.5
	100.0	100.0	100.0	100.0
	(233)	(215)	(211)	(659)
Total	35.4	32.6	32.0	100.0

Low SES School

Entry \ Intent	4-Yr.	2-Yr.	None	Total
4-Yr.	66.7	12.5	0.0	31.6
2-Yr.	26.7	68.8	14.3	42.1
None	6.7	18.8	85.7	26.3
	100.0	100.0	100.0	100.0
	(15)	(16)	(7)	(38)
Total	39.5	42.1	18.4	100.0

Table 14 (cont.)

Middle SES Neighborhood

High SES School

Entry \ Intent	4-Yr.	2-Yr.	None	Total
4-Yr.	72.7	4.0	6.7	26.3
2-Yr.	23.0	75.6	25.6	41.8
None	4.3	20.5	67.8	31.9
	100.0	100.0	100.0	100.0
	(161)	(176)	(180)	(517)
Total	31.1	34.0	34.8	100.0

Middle SES School

Entry \ Intent	4-Yr.	2-Yr.	None	Total
4-Yr.	59.2	3.4	4.3	16.5
2-Yr.	33.1	73.1	22.3	44.5
None	7.6	23.5	73.4	39.0
	100.0	100.0	100.0	100.0
	(341)	(584)	(575)	(1500)
Total	22.7	38.9	38.3	100.0

Low SES School

Entry \ Intent	4-Yr.	2-Yr.	None	Total
4-Yr.	52.4	7.7	1.6	17.2
2-Yr.	40.5	60.9	16.8	37.7
None	7.1	31.4	81.6	45.1
	100.0	100.0	100.0	100.0
	(126)	(156)	(190)	(470)
Total	26.7	33.1	40.3	100.0

Table 14 (cont.)

Low SES Neighborhood

High SES School

Entry \ Intent	4-Yr.	2-Yr.	None	Total
4-Yr.	72.7	0.0	7.7	20.0
2-Yr.	18.2	73.5	20.5	38.9
None	9.1	26.5	71.8	41.1
	100.0	100.0	100.0	100.0
	(22)	(34)	(39)	(95)
Total	23.2	35.8	41.1	100.0

Middle SES School

Entry \ Intent	4-Yr.	2-Yr.	None	Total
4-Yr.	61.1	0.0	7.8	14.5
2-Yr.	31.3	76.7	23.5	44.3
None	7.5	23.3	68.6	41.2
	100.0	100.0	100.0	100.0
	(80)	(163)	(204)	(447)
Total	17.9	36.5	45.6	100.0

Low SES School

Entry \ Intent	4-Yr.	2-Yr.	None	Total
4-Yr.	44.6	1.0	4.8	8.0
2-Yr.	42.9	71.9	13.4	41.9
None	12.5	27.0	81.8	50.1
	100.0	100.0	100.0	100.0
	(56)	(196)	(209)	(461)
Total	12.1	42.5	45.3	100.0

(4759)

Table 15

Percent Entering College by I.Q. Level,
Holding Constant Intent to Enter

4-Yr. Intent

I.Q. Level

Entry	High	Mid High	Middle	Low	Total
4-Yr.	75.7	54.9	42.1	10.5	64.3
2-Yr.	21.9	37.9	46.9	52.6	30.3
None	2.4	7.1	11.0	36.8	5.4
	100.0	100.0	100.0	100.0	100.0
	(748)	(448)	(145)	(19)	(1360)
Total	55.0	32.9	10.7	1.4	100.0

2-Yr. Intent

I.Q. Level

Entry	High	Mid High	Middle	Low	Total
4-Yr.	8.6	2.0	2.6	1.9	3.5
2-Yr.	74.8	74.5	75.9	67.5	74.3
None	16.6	23.5	21.5	30.6	22.2
	100.0	100.0	100.0	100.0	100.0
	(326)	(698)	(493)	(157)	(1674)
Total	19.5	41.7	29.5	9.4	100.0

Table 15 (cont.)

No Intent

I.Q. Level

Entry	High	Mid High	Middle	Low	Total
4-Yr.	22.3	7.1	1.9	0.3	7.0
2-Yr.	22.0	25.9	21.7	13.4	21.8
None	55.7	67.0	76.4	86.3	71.2
	100.0	100.0	100.0	100.0	100.0
	(296)	(621)	(526)	(292)	(1735)
Total	17.1	35.8	30.3	16.8	100.0

Table 16

Percent Entering College by Intent to Enter,
Standardized on I.Q. Level

Entry	Intent: 4-Yr.	2-Yr.	None	Total
4-Yr.	53.4	4.0	9.5	20.1
2-Yr.	37.0	74.2	22.5	44.8
None	9.6	21.7	68.0	35.1
	100.0	100.0	100.0	100.0
	(1360)	(1674)	(1735)	(4769)
Total	28.5	35.1	36.4	100.0

Table 17

Percent Entering College by Intent to Enter,
Standardized on Neighborhood and School Socio-economic Status

		Intent			
		4-Yr.	2-Yr.	None	Total
Entry	4-Yr.	61.9	3.4	7.2	21.0
	2-Yr.	31.8	74.0	22.9	43.6
	None	6.4	22.6	70.0	35.5
		100.0	100.0	100.0	100.0
		(1316)	(1697)	(1746)	(4759)
Total		27.7	35.7	36.7	100.0

Table 18

Percent Entering College by I.Q. Level,
Standardized on Neighborhood and School Socio-economic Status

		I.Q. Level				
		High	Mid High	Middle	Low	Total
Entry	4-Yr.	46.3	17.1	7.5	1.7	21.6
	2-Yr.	34.9	48.7	48.8	38.8	43.8
	None	18.8	34.1	43.7	59.5	34.6
		100.0	100.0	100.0	100.0	100.0
		(1253)	(1638)	(1065)	(431)	(4387)
Total		28.6	37.3	24.3	9.8	100.0

Table 19

Percent Entering College by Neighborhood and School Socio-economic Status, Standardized on I.Q. Level

		School SES: High			School SES: Middle			School SES: Low		
		Neighborhood SES: High	Middle	Low	High	Middle	Low	High	Middle	Low
Entry	4-Yr.	30.6	25.0	22.9	27.4	15.0	19.3	29.4	23.3	16.7
	2-Yr.	46.8	40.1	42.5	48.4	46.7	44.4	43.5	35.7	42.4
	None	22.6	34.9	34.6	24.3	38.3	36.3	27.3	41.0	41.0
		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
		(527)	(479)	(81)	(626)	(1401)	(129)	(31)	(693)	(422)

Table 20

Percent Entering College by Neighborhood and School Socio-economic Status, Standardized on Intent to Enter

		School SES: High			School SES: Middle			School SES: Low		
		Neighborhood SES: High	Middle	Low	High	Middle	Low	High	Middle	Low
Entry	4-Yr.	25.0	24.0	23.0	26.2	18.0	21.7	22.9	20.7	14.5
	2-Yr.	45.5	42.7	38.5	47.5	45.1	44.0	37.1	37.9	42.4
	None	29.6	33.3	38.6	26.3	36.9	34.3	40.0	41.4	43.1
		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
		(571)	(517)	(94)	(662)	(1538)	(143)	(38)	(737)	(461)

Table 21

Percent Entering College by Neighborhood and School Socio-economic Status, Standardized on Intent to Enter and I.Q. Level

	School SES: High			School SES: Middle			School SES: Low		
	Neighborhood SES: High	Middle	Low	High	Middle	Low	High	Middle	Low
4-Yr.	23.9	24.1	23.8	25.0	18.5	22.6	*	22.9	19.2
2-Yr.	47.1	40.8	43.4	48.7	45.6	41.4	*	37.4	42.0
None	29.0	35.1	32.8	26.3	36.0	36.0	*	39.7	38.9
	100.0	100.0	100.0	100.0	100.0	100.0		100.0	100.0
	(527)	(477)	(81)	(623)	(1401)	(129)	(31)	(693)	(422)

*Too few cases to compute percentages standardized on <u>two</u> variables.

Table 22

Percent Intending to Enter College by I.Q. Level,
Standardized on Neighborhood and School Socio-economic Status

		I.Q. Level			
		High	Mid High	Middle	Low
Intent	4-Yr.	41.2	14.8	6.7	1.4
	2-Yr.	36.2	50.4	49.8	39.2
	None	22.5	34.8	43.5	59.4
		100.0	100.0	100.0	100.0
		(1256)	(1637)	(1065)	(431)

Table 23

Percent Intending to Enter College by Neighborhood and School Socio-economic Status, Standardized on I.Q. Level

Intent	School SES: High — Neighborhood SES: High	High — Middle	High — Low	School SES: Middle — Neighborhood SES: High	Middle — Middle	Middle — Low	School SES: Low — Neighborhood SES: High	Low — Middle	Low — Low
4-Yr.	42.2	29.6	23.3	31.5	21.2	21.6	31.6	30.8	21.2
2-Yr.	36.1	39.0	43.0	39.7	45.1	43.9	49.6	36.5	47.0
None	21.7	31.4	33.7	28.8	33.7	34.5	18.8	32.7	31.8
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	(598)	(541)	(93)	(710)	(1616)	(149)	(37)	(839)	(539)

(5122)

FOOTNOTES

[1] Coleman, James S., Ernest Q. Campbell, Carol J. Hobson, James McPartland, Alexander M. Mood, Frederic D. Weinveld and Robert L. York, Equality of Educational Opportunity, Washington: U.S. G.P.O., 1966.

[2] Wilson, Alan B., "Residential Segregation of Social Classes and Aspirations of High School Boys," American Sociological Review, 24 (December 1959), pp. 836-845.

[3] Rhodes, A. L., A. J. Reiss, Jr., and O. D. Duncan, "Occupational Segregation in a Metropolitan School System," American Journal of Sociology, 70 (May 1965), pp. 682-694.

[4] See, for example, R. P. Boyle, "Effect of the High School on Students' Aspirations," American Journal of Sociology, 71 (1966), pp. 628-639; Robert E. Herriott, "Some Social Determinants of Educational Aspirations," Harvard Educational Review, 33 (1963), pp. 157-177; Edward L. McDill, Edmund D. Meyers, Jr. and Leo R. Rigsby, "Institutional Effects on the Academic Behavior of High School Students," Sociology of Education, 40 (Summer, 1967), pp. 181-199; Edward L. McDill and James Coleman, "High School Social Status, College Plans, and Interest in Academic Achievement; A Panel Analysis," American Sociological Review, 28 (December 1963), pp. 905-918; Edward L. McDill and James Coleman, "Family and Peer Influence in College Plans of High School Students," Sociology of Education, 38 (Winter, 1965), pp. 112-126; John A. Michael, "High School Climates and Plans for Entering College," Public Opinion Quarterly, 25 (Winter, 1961), pp. 585-595; Raymond A. Mulligan, "Socio-economic Background and College Enrollment," American Sociological Review, 16 (April 1951), pp. 188-196; William H. Sewell, "Community of Residence and College Plans," American Sociological Review, 29 (February 1964), pp. 24-38; William H. Sewell and J. Michael Armer, "Neighborhood Context and College Plans," American Sociological Review, 31 (April 1966), pp. 159-168; William H. Sewell, A. O. Haller and M. A. Straus, "Social Status and Educational and Occupational Aspirations," American Sociological Review, 22 (February 1957), pp. 67-73; Ralph H. Turner, The Social Context of Ambition, San Francisco: Chandler Publishing Co., 1964; and Alan B. Wilson, "Residential Segregation of Social Classes and Aspirations of High School Boys," American Sociological Review, 24 (December 1959), pp. 836-845. For additional references, see Sewell and Armer, Op. cit. and Sewell, Haller and Strauss, Op. cit.

[5] Op. cit.

[6] Op. cit.

[7] Op. cit.

[8] Op. cit.

[9] Op. cit.

[10] In addition to the reports directly relating neighborhood or school contexts to achievement or aspiration, two sets of research literature are relevant. The first has to do with class and stratification, a subject on which extensive bibliographies have developed in sociology, psychology, and education. Illustrative of these are W. Charters, Jr., "Social Class Analysis and the Control of Public Education," Harvard Educational Review, 23 (1953); Allison Davis, Social Class Influence Upon Learning, Cambridge: Harvard University Press, 1948; August B. Hollingshead, Elmstown's Youth, New York: Wiley, 1949; Edgar Litt, "Civic Education, Community Norms and Political Indoctrination," American Sociological Review, 28 (1963), pp. 69-75; Frank Riessman, The Culturally Deprived Child, New York: Harper and Row, 1962; Patricia Cayo Sexton, Education and Income, New York: Viking, 1961; Robert J. Havighurst, "Education, Social Mobility and Social Change in Four Societies," International Review of Education, IV (1958); Ralph H. Turner, "Sponsored and Contest Mobility and the School System," American Sociological Review, 25 (1960), pp. 855-867; Dael Wolfe (ed.), America's Resources of Specialized Talent, New York: Harper, 1944. The list of articles in this circumscribed area could continue for pages.

The second has to do with the inter-relation of school and community contexts with ethnic and stratification variables. For a sampling of the literature, see James S. Coleman, et al., Equality of Educational Opportunity, Op. cit., Herbert Gans, The Urban Village, New York: Free Press, 1962; Natalie Rogoff, "American Public Schools and Equality of Opportunity," Journal of Educational Sociology (February 1960), pp. 252-259; Ronald G. Corwin, "Social Class Influences on the School System," in A Sociology of Education, New York: Appleton-Century Crofts, 1965; Robert Perrucci, "Education, Stratification and Mobility," in D. A. Hansen and J. E. Gerstl, (eds.), On Education-Sociological Perspectives, New York: Wiley, 1967; Bruno Bettelheim, "Segregation: New Style," School Review, 66, pp. 251-272; Gunnar Myrdal, An American Dilemma, New York: Harper, 1944; V. A. Clift, et al., Negro Education in America, New York: Harper, 1962; James B. Conant, Slums and Suburbs, New York: McGraw-Hill, 1961; Horace Mann Bond, The Education of the Negro, Englewood Cliffs: Prentice-Hall, 1934; Hubert H. Humphrey, (ed.), School Desegregation, New York: Crowell, 1964; B. J. Chandler, et al., (eds.), Education in Urban Society, Dodd Mead, 1962.

[11] A moderate relation of Sex to College Entry was seen, but when employed as a control Sex added little to the effects of the other control variables. A strong relation of Race to Entry was also found but again, when utilized as a control variable, Race added little to the effects of the other variables. It is of interest that preliminary impressions from further analyses now underway suggest that the relation of College Entry to Race is in large part accounted for when I.Q., Intent and Neighborhood contexts are controlled.

[12] Although "representativeness" of the sample is assured it must be recognized that San Diego is no more representative of all U.S. communities than any other single city. Nonetheless, San Diego is a reasonable location for the study of the effects of socio-economic stratification,

for it includes large segments of well-to-do middle class residents, allowing reasonable classifications readily appropriate to our methods of analysis.

Data on the two remaining of San Diego's 13 schools were not employed, as these schools are oriented toward "problem students" or adult continuation. In 1966 these two schools, combined, graduated a total of 80 students.

[13] In addition to these data, we have recorded on IBM tapes for further analysis information on place and date of birth, dates of entry into and completion of graduating junior high school and high school, where graduating, dates of completion of 8th grade, scores on basic tests in English and mathematics and the date and completion of such mandated requirements as first aid, drivers' education, and a constitution test. For future possible analysis, we also have recorded each course taken each year from 9th through 12th grade, including summer school, with grade achieved and school in which taken.

[14] The students were asked the following questions:

AFTER GRADUATION, I PLAN TO: (check only one)
(1) work full time, (2) enroll in school or college, (3) be a housewife and no other occupation, (4) enter active military service, (5) engage in a combination of part time occupations (includes housewives working &/or going to school part time), (6) other (explain)

IF YOU PLAN TO DO SOMETHING ELSE PART TIME, WHAT IS IT: (check one or more items as appropriate)
(1) work part time, (2) enroll in school or college part time (11 units or less), (3) be a housewife with another occupation, (4) unemployed part time

IF YOU PLAN TO WORK, WHAT IS:
Company or employer's name, if known; Kind of industry or business; Title or description of job

IF YOU PLAN TO GO TO SCHOOL OR COLLEGE, EITHER FULL OR PART TIME, WHAT IS:
Name of school or college; Your major / or primary goal

Name--
Address--

[15] The students were asked:

SCHOOL STATUS:
(1) In college or school (12 units or more), (2) In college or school (11 units or less), (3) Not in school; (4) Name of college or school, (5) School major or primary goal

EMPLOYMENT STATUS:
Employed: (1) Yes; If yes, Full-time; or Part-time, (2) No; (3) Not available for employment
If employed: (4) Company or employer's name, (5) Type of industry or business, (6) Exact title of your job

OTHER:
(1) Active duty military service, (2) Housewife, (3) Marital status: Single___ Married___

Correct Address--
New name if married--

[16] The indices in Tables 2 and 3 were constructed as follows: For each school, each senior was classified on mean years of school completed, mean percent in upper and middle status occupations and mean income of persons 14 years and older in his census tract of residence. The students in school number one, for example, had an aggregate mean of 13.4 years of school completed. This may be interpreted in the following manner. On the average for those students in this particular school, each person 14 years or older in their census tract of residence had completed high school (12 years of school) and also had an additional 1.4 years of advanced training in a college or university. Mean income may be interpreted in a similar manner. On the average for those students in school one the income per family was $8752. The eleven high schools were categorized by ranking them on each index, summing the three ranks, and dividing into three status categories. Those with a sum of 12 or less were classified as High in status; those with a sum of 12.5 to 20 were classified as Middle and those with a sum of 27 or more were classified as Low. Neighborhood socio-economic status was derived from the median income of the census tract in which the student resided. Those students living in tracts with a median income of $5900 or less were classified as Low in Neighborhood socio-economic status. Those in tracts with a median income of $6000 to $7900 were classified as Middle and those with a median income of $8000 or more were classified as High in Neighborhood socio-economic status.

[17] Since the two independent variables rest on a similar base, there is some danger of contamination. As is pointed out in the final section of this paper, the overall effect of resulting contamination would likely be the suppression of differences in the two variables.

[18] I.Q. is based upon general intelligence examinations of which the resulting scores are recorded as "stanines," a nine point index, with a top value of one, a low value of nine, and mean, median and mode values of five. Segments two through eight are each equal to one-half of a standard deviation; segments one and nine describe the upper and lower areas under the curve in excess of one and three-fourths standard deviation from the mean. In terms of percents the first stanine includes the the top four percent, the second includes the next seven percent, third includes the next twelve percent, fourth includes the next seventeen, fifth the next twenty, sixth the next 17%, seventh the next twelve, eighth the next seven, and finally the ninth includes the bottom four percent. This classification rests upon the assumption that intelligence is normally distributed and makes all the assumptions that the normal distribution requires. For the present analysis, I.Q.s were categorized as "High" (stanines 1 and 2), "Moderately High" (stanines 3 and 4), "Moderate" (stanines 5 and 6), and "Low" (stanines 7-9).

[19] Evidence that discrepancies increase is primarily oriented toward differences between races, but can be reasonably taken as relevant to socio-economic status as well. For references see footnotes 4 and 10.

[20] The bulk of those who did not respond to the survey question--almost half--had indicated no college aspirations, and only slightly more than

15% indicated 4-year college intentions. In terms of characteristics associated with college entry, such as SES contexts and I.Q. or GPA, there are disproportionately few who would be expected to have actually enrolled in college. That is, the disproportionate number with low I.Q. and GPA and from low SES neighborhoods and school suggests strongly that these high school graduates for whom we have no follow-up information could reasonably be assigned to the "no college entry" classification without doing great violence to the resulting patterns of association. In particular, it seems reasonable to assign those who indicated no college intentions to the "no entry" category. The effects of this procedure may be seen in comparing Table 7 with the following table. In Table 7 the "No-Response, Non-Intent" have been included in the cell "No-Entry, No-Intent"; in the following table, they have been dropped from the analysis.

[21] See Morris Rosenberg, "Test Factor Standardization as a Method of Interpretation," Social Forces, 41 (October 1962), pp. 53-61. The standardized table is constructed in the following manner: 1) compute the partial percentage tables, 2) compute the proportion of the total N represented by the N of each partial table, 3) multiply the proportions obtained in 1) by the respective proportions obtained in 2), 4) add corresponding entries in the partial tables to obtain the standardized total table.

[22] Gold's I is an index of how much more closely the standardized table approaches complete independence of variables than does the original table without controls. The index is computed as follows: one minus the ratio of the sum of the absolute differences between the computed frequencies and the independence values for chi-square computation in the standardized table and of the sum of the absolute differences between the observed frequencies and their independence values in the original table. The index registers zero for no difference between the original table and the standardized table--nothing is accounted for by the control variable--and one when the association disappears completely in the standardized table--the control variable accounts entirely for the originally observed zero-order association.

[23] A rough estimate of I is given because our computer program was written to reject computation for very small N's. In this case, there were too few cases in the category High Neighborhood SES and Low School SES.

[24] The chi square values for tables 16-18 are generally large: Table 16 yields a chi square of 146.60 (from an original zero-order table value of 289.59, in which missing observations on I.Q. are excluded); table 17 yields a chi square of 79.72 (zero-order, 308.17); table 18 yields a chi square of 55.49 (zero-order, 289.59). Each of these chi-square values is clearly significant well beyond the .001 level. Though these chi-square values are of relevance to our analysis in providing a base for the computation of Gold's I, and although they reflect the striking effects of I.Q. and intent on relation of college entry to School and Neighborhood context, they cannot be taken to suggest that the remaining relationship is statistically significant.

[25] It may be countered that that which accounts for differing neighborhood and school environments also accounts for differing performance on tests of abilities; i.e., the association is spurious. We do not have data to test this notion in this study. However, we experience considerable difficulty in conceiving some antecedent variable that could reasonable account for variation both in neighborhoods and schools and in measured abilities.